Gundersen Health System
Integrated solutions help achieve mission and energy independence
La Crosse, WI

A physician-led, not-for-profit healthcare network, Gundersen Health System employs more than 6,000 medical and dental staff and support personnel at hospitals and clinics in Wisconsin, Minnesota and Iowa, and is the Western Clinical Campus for the University of Wisconsin School of Medicine & Public Health. When faced with escalating energy costs, Gundersen Health System took action to develop sustainable approaches to energy use. Its programs have not only resulted in significant energy savings, but are also helping it achieve its healthcare mission.

Challenge
With its energy costs increasing at a rate of $350,000 a year, Gundersen Health System knew it needed to take action to lower energy consumption, save money for patients and preserve valuable resources. Making sustainability a top priority, the health system developed its Envision® program, an initiative aimed at reducing energy usage and the cost of healthcare, as well as improving air quality and the health of its community. The Envision program includes an aggressive goal to achieve energy independence by the year 2014, meaning Gundersen Health System will produce as much renewable energy as it uses by engaging in energy efficiency programs and smart business strategies.

Solution
To put ‘green’ into action, Gundersen Health System initiated a retrocommissioning process. Retrocommissioning examines heating, cooling, lighting and employee behavior and uses low-cost or no-cost measures to improve efficiency and reduce energy demand. In 2008, Gundersen Health System hired Trane as its retrocommissioning agent. A comprehensive energy audit was conducted to identify areas where operational and financial benefits could be achieved. Historical data was gathered from utility bills and a baseline was established in order to measure future savings. Dozens of energy conservation opportunities were identified and prioritized based on payback and impact.

Optimizing chiller plant and cooling tower operations
A Trane Tracer Summit® Building Automation System (BAS), with Tracer ES™ software was installed to allow Gundersen Health System to monitor and control energy use throughout its system via the Internet. Using the BAS, temperature controls were reprogrammed to allow the fans in the cooling towers to interact with the chillers. The two components were programmed to run at the most efficient settings, based on outside conditions, such as temperature and humidity. Once proven successful at one building, the chiller plant and cooling tower optimization was replicated in all Gundersen Health System campus buildings with chilled water systems.
Achieving optimal comfort, minimal energy consumption

Trane Climate Changer™ air handlers help ensure the comfort of patients and staff by determining cooling or heating needs in various building zones. The air handlers are programmed to shut off, slow down or start as needed, to achieve optimal temperatures with minimal energy consumption. T-8 fluorescent lamps, ballasts and reflectors replaced T-12 lighting to provide comparable light intensity, while using half the energy.

Upgrading conserves energy, increases capacity

Three forty-year-old cooling towers and an aging chiller were at risk of failure at Gunderson Health System’s hospital. More energy efficient 1300 ton Trane CenTraVac™ centrifugal chillers, cooling towers and chilled water pumps replaced the aging system, significantly reducing electricity use. The system also increased capacity to cool a new data center and an upcoming hospital addition, eliminating the need for duplicate equipment.

Employing a single source security solution

Multiple key system types and the logistics of working with a national program made it difficult to efficiently and effectively maintain security at Gunderson Health System facilities. Trane introduced the health system to Ingersoll Rand’s Security Technologies business segment to provide a single-source security solution. Security specifications were updated, removing duplications to reduce costs. A long-term dealer commitment, set up to support aftermarket needs, provided additional savings. The health system’s new hospital was secured with Schlage patented key systems and electronic locks; Von Duprin exit devices; and LCN door closers and operators. Upgrades have begun on a second Gunderson Health System facility.

Results

A model for healthcare providers nationwide, Gunderson Health System’s Envision® program proves that there are sustainable approaches to energy use that complement solid financial business decisions. Retrocommissioning efforts and infrastructure upgrades have contributed to a 25 percent reduction in energy intensity (Btu/sq ft) resulting in $1.25M in annual savings.

Corey Zarecki, director, Envision Engineering and Operations, said, “By working with industry leaders like Trane to define and implement energy strategy, Gunderson Health System is able to execute on our vision of turning good intentions and green theory into action with measurable results.”

“Every measure we take must make sense from both an environmental and financial perspective,” said Jeff Rich, executive director, Envision®. “But our sustainability efforts are achieving much more than saving energy and reducing costs. We’re keeping healthcare costs down for our patients, making an investment in our local economy and improving the health of the community. It all fits perfectly with our mission of healthcare excellence.”

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